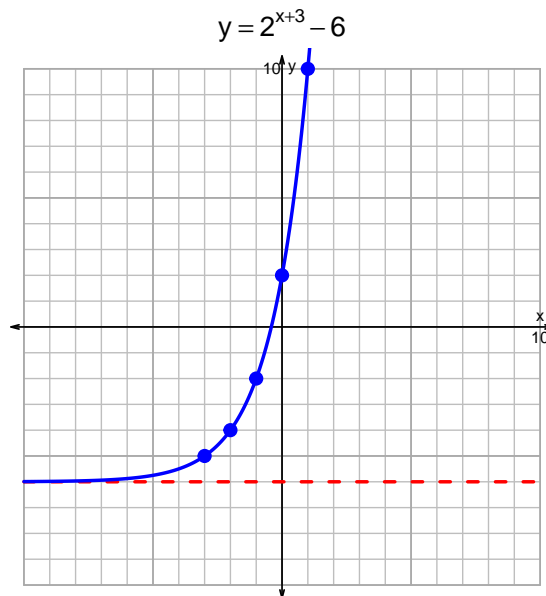
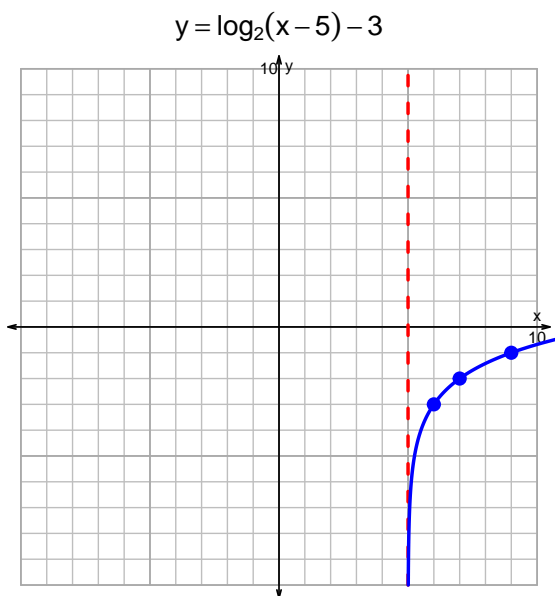


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v265)

1. Graph $y = \log_2(x - 5) - 3$ and $y = 2^{x+3} - 6$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$23 = \left(\frac{4}{7}\right) \cdot 2^{-3t/5}$$

Divide both sides by $\frac{4}{7}$.

$$\frac{23 \cdot 7}{4} = 2^{-3t/5}$$

Take log, base 2, of both sides.

$$\log_2 \left(\frac{23 \cdot 7}{4} \right) = \frac{-3t}{5}$$

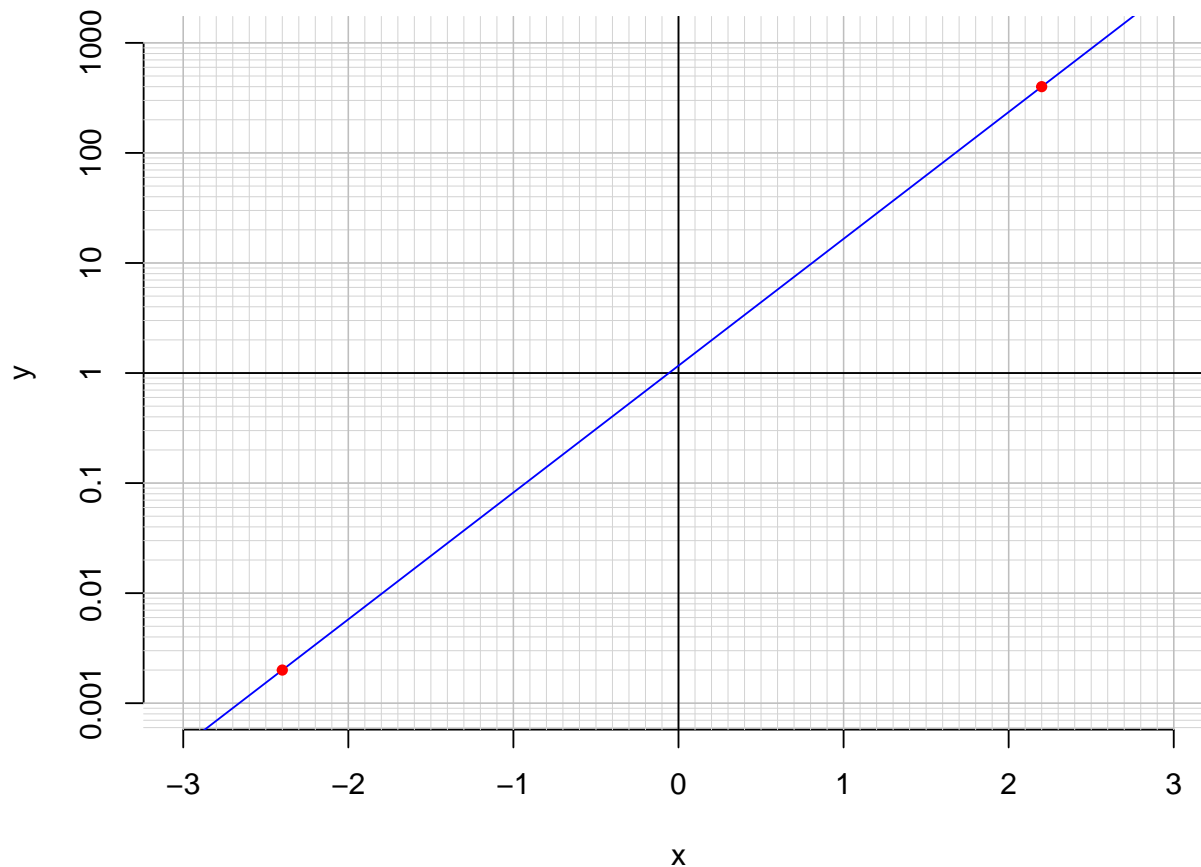
Divide both sides by $\frac{-3}{5}$.

$$\frac{-5}{3} \cdot \log_2 \left(\frac{23 \cdot 7}{4} \right) = t$$

Switch sides.

$$t = \frac{-5}{3} \cdot \log_2 \left(\frac{23 \cdot 7}{4} \right)$$

3. An exponential function $f(x) = 1.17 \cdot e^{2.65x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(-2.4)$.

$$f(-2.4) = 0.002$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{1}{2.65} \cdot \ln\left(\frac{x}{1.17}\right)$$

- c. Using the plot above, evaluate $f^{-1}(400)$.

$$f^{-1}(400) = 2.2$$